APPLIED RESEARCH GRANT PROGRAM
GUIDELINES

APPROVED by the Board of Directors
On May 21, 1999

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INTRODUCTION

The Arkansas Science & Technology Authority is empowered by the Arkansas Legislature to encourage, establish, and support both basic and applied research in science and technology in the state's colleges and universities.

The following guidelines address only proposals for the Authority's Applied Research Grant Program. The Authority is governed by a Board of Directors that awards grants to qualified applicants to conduct research investigations. Through these grants, the Board seeks to encourage and support scientific research in areas that directly contribute to the economic development of the state.

APPLIED RESEARCH GRANTS

Applied Research Grants can be used to fund any activity that seeks to utilize, synthesize, or apply existing scientific or technical knowledge, information or resources to the resolution of a specific problem, question, or issue. It is the Authority's intention to concentrate its support on projects that enhance technological innovation, and hence economic development, within the state. Thus, proposals must meet the following conditions:

1. The project must demonstrate feasible concepts that have potential for either industrial or commercial application for new products, processes, or services.

2. The project must be carried out in cooperation with an Arkansas industry or private source that provides fifty percent or more of the total cost or thirty-three and one-third percent or more if the private industry is principally located in Arkansas and has fifty or fewer employees.

3. The project must demonstrate the potential to enhance the opportunities for employment in Arkansas.

Industry support includes matching funds, new machinery, and new equipment as defined in Section 26-51-1101 of the Arkansas Code of 1987 Annotated (an Act that provides a research and development tax credit for qualifying research approved by the Authority and the Department of Higher Education).

APPLICANT ELIGIBILITY

Arkansas colleges and universities and faculties at these institutions may submit applications to the Authority. Applications must be submitted in accordance with procedures established at the institutions for submissions of requests for external support.

TYPES OF PROJECTS

The Authority funds projects that have a high probability of contributing to the growth, development, and enhancement of the Arkansas economy. Consistent with this objective, the Authority supports applied research that seeks to refine either existing scientific knowledge or concepts and to develop usable technologies. The Applied Research Grant Program of the Authority will not support market research for particular products or inventions.

SUBMISSION OF APPLIED RESEARCH PROPOSALS

The Arkansas Science & Technology Authority accepts solicited and unsolicited Applied Research Proposals. Unsolicited proposals are excepted anytime during the fiscal year. The scheduled deadline dates for grant submission can be obtained either from your Office of Research & Sponsored Programs or by contacting the Authority Office at 501-324-9006.

Nine (9) copies of a proposal must be submitted. Each proposal must not exceed twenty-five pages, including cover page and appendices. Unless specifically stated in the guidelines, all portions of an application must be typed double-spaced on standard letter-size paper, using a font size no smaller than 12 point, and have one-inch margins. The Authority will not accept fax copies of proposals. The proposal must contain, in order, each of the following items:

1. A cover letter from the Research & Sponsored Programs Office of the Principal Investigator's institution must accompany the research proposal. The letter is separate from the proposal.

2. A CIP Code number (Appendix I) that clearly describes the field of research must be indicated on the Cover Sheet (Appendix II). The Cover Sheet is the first page of the proposal.

3. The Cover Sheet must have a brief abstract that defines the exact nature and scope of the project. The abstract can be single-spaced if necessary.

4. The Cover Sheet must have the signatures of the appropriate university or college officials and the Principal Investigator.

5. Page two of the proposal begins with a specific objective(s) statement for performing the research. Included in this statement must be a description of how the objectives of the proposal relate to the economic development of Arkansas and how the project will enhance the employment opportunities within the state.

6. A review of the current literature on the proposal topic is required. Include within the body of the literature the various abbreviated citations, e.g., author, year. A complete list of author, year, title, scientific journal, book, volume and pages must occur immediately after the literature review section. When citations occur in the implementation plan the listing of citations will occur after this section. Each citation must be single-spaced and double-spaced between individual items.

7. A clearly defined implementation plan for the accomplishment of the project is required. The implementation plan must include a description of the proposed activities, experimental design and methods, timetable, and information detailing the availability of support facilities, equipment, and personnel necessary to attain the project's objectives.

8. A detailed budget for the project period including personnel, fringe benefits, equipment, supplies, and travel is required (Appendix III). Expenditures made more than 90 days prior to an award will not be approved. Verification of expenditures will be required by the Authority. Note: The Authority will not fund indirect costs, but institutions may budget indirect costs at 50% of the approved NIH or NSF schedule. Budget changes will require prior approval be the Authority.

9. A letter is necessary from the cooperating industry or private source committing the required matching funds pending the awarding of the Authority's grant. The Authority will not fund the project until the industry or private source match has been made.

10. A statement of future support plans for the research from sources other than the State. This section must include the identification of the funding sources.

11. A description of the faculty personnel and their qualifications is required. Faculty members identified for a project can be listed as Co-Principal Investigators. The person principally responsible for the actual work must be listed as the Principal Investigator. Relevant information must include the academic credentials of key professionals, a list of recent publications in accepted professional journals, and a listing of external support. The publication and external support information can be single-spaced and double-spaced between individual citations. The list of external funding must include all investigators and the dates when awarded. Indicate any previous Authority funding and the award dates. This section must include a statement of each researcher's percentage effort on the proposed project.

12. A statement addressing the extent to which the proposed research will establish or expand the established institutional base of research capability.

13. A statement addressing the potential of the proposed project to enhance the economy of Arkansas.

14. A statement that a final summary report will be submitted to the Authority within sixty days after the expiration of the award. A Final Summary Report format is attached (Appendix IV).

15. Final expenditure information must be provided by the grantee's financial officer. The officer's report must be on a separate page and included with the final report.

One copy of a statement summarizing your research proposal is required. The summary must be written in non-scientific language that can be understood by an educated individual. The copy must be on a separate page from the proposal and include both the project title and the investigator's name. The description must be typed double-spaced on standard letter-size paper, using a font of 12 point, and have one-inch margins. The length of the summary must not be less than 200 words and not longer than one printed page. The Authority may disseminate the summary. Please be especially cognizant of correct syntax, spelling and grammar when constructing the summary.

Proprietary information contained in Applied Research Proposals will be subject to the limitations of the Freedom of Information Act provided that information is clearly identified.

PROJECT REVIEW CRITERIA

Each eligible proposal will be reviewed and evaluated by peer reviewers appointed by the Research Committee of the Authority's Board of Directors. List on a separate sheet of paper the names and telephone numbers of five individuals who could be used as reviewers of your grant proposal. Also indicate the names of individuals you do not want to review your research proposal. In evaluating the proposals, each reviewer will use the following criteria:

1. The scientific merit of the research proposal, that includes the quality and importance of the suggested research procedures.

2. The competence of the professional personnel involved in the project as indicated by relevant academic training, research, and publications.

3. The availability of administrative support and resources necessary to ensure a reasonable probability of project success.

4. The soundness of the implementation plan and the likelihood that the project objectives will be achieved.

5. The potential of the project to enhance the transfer of science and technology between academia, business, and industry.

6. The commercial feasibility of the proposed research within two, five, or ten years.

7. The probability of the proposed project to enhance employment opportunities in Arkansas.

8. The probability of the project to attract private investment.

9. The probability of the project attracting support from sources other than the Authority.

Proposals not of sufficient quality to meet national standards will be returned without consideration by the Research Committee.

The Research Committee is committed to recommending to the Board of Directors for funding only those proposals that have clear economic development potential and are ranked as being meritorious. The Authority will make every effort to complete the review process within ninety (90) days of proposal deadlines or receipt of unsolicited proposals.

AWARDS

The final decision to commit funds to an applicant will be made by the Board of Directors of the Authority. The decision to fund will be based on information derived from the review process and its accompanying criteria and the Board's own interpretation of the information. The decision of the Board is final. Awards will be announced at the meeting of the Board of Directors following proposal review and evaluation.

ACKNOWLEDGMENTS

All publications or presentations that result from an award must acknowledge the financial assistance provided by the Arkansas Science & Technology Authority. Reprints or photocopies of publications related to the grant must be forwarded to the Authority.

MAILING INFORMATION

Proposals must be sent to the attention of Vice President Research, Arkansas Science & Technology Authority, 100 Main Street, Suite 450, Little Rock, Arkansas 72201. Receipt of the proposals will be acknowledged promptly and each institution will be advised of any action taken by the Authority.

CHECKLIST FOR PROPOSAL SUBMISSION

To assure that research proposals submitted to the Authority are complete, an administrative check of the following items should be made before mailing.

____ Office of Research & Sponsored Programs letter.

____ Project CIP Code category indicated on Cover Sheet (Appendix I).

____ Completed Cover Sheet and a project summary (Appendix II).

____ All required signatures (Principal Investigator, Co-Principal Investigator, and authorizing official) on Cover Sheet.

____ Detailed description of the proposed research.

____ Literature review followed by a detailed list of cited literature in the proposal.

____ Implementation plan that includes a list or description of available facilities and major items of equipment to be used in the proposed research.

____ Budget in requested format (Appendix III), including brief description and justification of major items of requested equipment.

____ Source and amount of required matching funds. Include a letter from the cooperating industry or private source indicating their contribution to the project.

____ Future support statement and funding possibilities.

____ Vita of the Principal Investigator and all Co-Principal Investigators.

____ A statement regarding the establishment of an institutional base of research capability.

____ A statement of how the project will enhance the Arkansas economy.

____ Statement concerning the Final Summary Report.

____ Page limitation not exceeded.

____ Nine (9) copies of the proposal. <u>The first copy is the original and signed document</u>.

____ Non-scientific summary of the research proposal (separate enclosure).

APPENDIX I

CIP CODES

AGRICULTURE
- 01. Agricultural Business and Production
  - 01.01 Agricultural Business and Management
  - 01.02 Agricultural Mechanization
  - 01.03 Agricultural Production Workers and Managers
  - 01.04 Agricultural and Food Products Processing
  - 01.05 Agricultural Supplies and Related Services
  - 01.06 Horticulture Services Operations and Management
  - 01.07 International Agriculture
  - 01.99 Agricultural Business and Production, Other
- 02. Agricultural Sciences
  - 02.01 Agriculture/Agricultural Sciences
  - 02.02 Animal Sciences
  - 02.03 Food Sciences and Technology
  - 02.04 Plant Sciences
  - 02.05 Soil Sciences
  - 02.99 Agriculture/Agricultural Sciences, Other
- 03. Conservation and Renewable Natural Resources
  - 03.01 Natural Resources Conservation
  - 03.02 Natural Resources Management and Protective Services
  - 03.03 Fishing and Fisheries Sciences and Management
  - 03.04 Forest Production and Processing
  - 03.05 Forestry and Related Sciences
  - 03.06 Wildlife and Wildlands Management
  - 03.99 Conservation and Renewable Natural Resources, Other

COMMUNICATIONS
- 10. Communications Technologies
  - 10.01 Communications Technologies

COMPUTER AND INFORMATION SCIENCES
- 11. Computer and Information Sciences
  - 11.01 Computer and Information Sciences, General
  - 11.02 Computer Programming
  - 11.03 Data Processing Technology
  - 11.04 Information Sciences and Systems
  - 11.05 Computer Systems Analysis
  - 11.07 Computer Science
  - 11.99 Computer and Information Sciences, Other

ENGINEERING
- 14. Engineering
  - 14.01 Engineering, General

14.02 Aerospace, Aeronautical, and Astronautical engineering
14.03 Agricultural Engineering
14.04 Architectural Engineering
14.05 Bioengineering and Biomedical Engineering
14.06 Ceramic Sciences and Engineering
14.07 Chemical Engineering
14.08 Civil Engineering
14.09 Computer Engineering
14.10 Electrical, Electronics, and Communications Engineering
14.11 Engineering Mechanics
14.12 Engineering Physics
14.13 Engineering Science
14.14 Environmental/Environmental Health Engineering
14.15 Geological Engineering
14.16 Geophysical Engineering
14.17 Industrial/Manufacturing Engineering
14.18 Materials Engineering
14.19 Mechanical Engineering
14.20 Metallurgical Engineering
14.21 Mining and Mineral Engineering
14.22 Naval Architecture and Marine Engineering
14.23 Nuclear Engineering
14.24 Ocean Engineering
14.25 Petroleum Engineering
14.27 Systems Engineering
14.28 Textile Sciences and Engineering
14.29 Engineering Design
14.30 Engineering/Industrial Management
14.31 Materials Science
14.32 Polymer/Plastics Engineering
14.99 Engineering, Other

15. Engineering-related Technologies
15.01 Architectural Engineering Technology
15.02 Civil Engineering/Civil Technology
15.03 Electrical and Electronic Engineering-Related Technology
15.04 Electromechanical Instrumentation and Maintenance Technology
15.05 Environmental Control Technologies
15.06 Industrial Production Technologies
15.07 Quality Control and Safety Technologies
15.08 Mechanical Engineering-Related Technologies
15.09 Mining and Petroleum Technologies
15. Engineering-related Technologies (continued)
15.10 Construction/Building Technology
15.11 Miscellaneous Engineering-Related Technologies
15.99 Engineering-Related Technologies, Other

HEALTH

17. Allied Health

- 17.01 Dental Services
- 17.02 Diagnostic and Treatment Services
- 17.03 Medical Laboratory Services
- 17.04 Mental Health and Human Services
- 17.05 Miscellaneous Allied Health Services
- 17.06 Nursing-Related Services
- 17.07 Ophthalmic Services
- 17.08 Rehabilitation Services
- 17.09 Allied Health, Other

18. Health Science

- 18.01 Audiology and Speech Pathology
- 18.02 Basic Clinical Health Sciences
- 18.03 Chiropractic
- 18.04 Dentistry
- 18.05 Emergency/Disaster Science
- 18.06 Epidemiology
- 18.07 Health Science Administration
- 18.08 Hematology
- 18.09 Medical laboratory
- 18.10 Medicine
- 18.11 Nursing
- 18.12 Optometry
- 18.13 Osteopathic Medicine
- 18.14 Pharmacy
- 18.15 Podiatry
- 18.16 Population and Family Planning
- 18.21 Prosectorial Science
- 18.22 Public Health Science
- 18.23 Toxicology
- 18.24 Veterinary Medicine
- 18.25 Health Science, Other

HOME ECONOMICS

19. Home Economics

- 19.05 Foods and Nutrition Studies

BIOLOGICAL SCIENCES/LIFE SCIENCES

26. Biological Sciences/Life Sciences

- 26.01 Biology, General
- 26.02 Biochemistry and Biophysics
- 26.03 Botany
- 26.04 Cell and Molecular Biology

26.05 Microbiology/Bacteriology
26.06 Miscellaneous Biological Specializations
26.07 Zoology
26.99 Biological Sciences/Life Sciences, Other

MATHEMATICS
27. Mathematics
27.01 Mathematics
27.03 Applied Mathematics
27.04 Pure Mathematics
27.05 Mathematical Statistics
27.99 Mathematics, Other

MULTI/INTERDISCIPLINARY STUDIES
30. Multi/Interdisciplinary Studies
30.01 Biological and Physical Sciences
30.03 Engineering and Other Disciplines
30.06 Systems Science and Theory
30.08 Mathematics and Computer Science
30.10 Biopsychology
30.99 Multi/Interdisciplinary Studies, Other

PHYSICAL SCIENCES
40. Physical Sciences
40.01 Physical Sciences, General
40.02 Astronomy
40.03 Astrophysics
40.04 Atmospheric Sciences and Meteorology
40.05 Chemistry
40.06 Geological and Related Sciences
40.07 Miscellaneous Physical Sciences
40.08 Physics
40.09 Planetary Science
40.99 Physical Sciences, Other
41. Science Technologies
41.01 Biological Technology
41.02 Nuclear and Industrial Radiologic Technologies
41.03 Physical Science Technologies
41.99 Science Technologies, Other

PSYCHOLOGY
42. Psychology
42.01 Psychology
42.0101 Psychology, General

42.02 Clinical Psychology
42.03 Cognitive Psychology and Psycholinguistics
42.04 Community Psychology
42.06 Counseling Psychology
42.07 Developmental and Child Psychology
42.08 Experimental Psychology
42.09 Industrial and Organizational Psychology
42.10 Personality Psychology
42.11 Physiological Psychology/Psychobiology
42.12 Psycholinguistics
42.13 Psychometrics
42.14 Psychopharmacology
42.15 Quantitative Psychology
42.16 Social Psychology
42.99 Psychology, Other

APPENDIX II

CIP CODE _____

ARKANSAS SCIENCE & TECHNOLOGY AUTHORITY
COVER SHEET FOR APPLIED RESEARCH PROPOSALS

1. Name of Institution _____

2. Principal Investigator _____

3. Mailing Address and Telephone Number for:

Institution Contract Office	Principal Investigator	Co-Principal Investigator
_____	_____	_____
_____	_____	_____
_____	_____	_____
( )_____	( )_____	( )_____
E-mail: _____	E-mail: _____	E-mail: _____

4. Title of Project _____

5. Requested Amount: $ _____

6. Project Summary:

_____	_____
Authorizing Official	Principal Investigator
Institution: _____	Department: _____
Date:_____	Date:_____

Signature on the application denotes that these individuals agree that the Principal Investigator is a qualified faculty member. In addition, that the signed individuals have read and understand the rules and guidelines governing the Applied Research Grants Program and agree to the award conditions.

APPENDIX III

ORGANIZATION			
PROJECT DIRECTOR			
SALARIES, WAGES, AND FRINGE BENEFITS	ASTA	MATCH	TOTAL
TRAVEL			
MATERIALS AND SUPPLIES			
EQUIPMENT			
CONTRACTUAL SERVICES, OTHER			
TOTAL DIRECT COSTS			
INDIRECT COSTS			
TOTAL COSTS			

INSTRUCTIONS FOR APPENDIX III SUMMARY PROPOSAL

BUDGET

I. GENERAL

Completion of this summary does not eliminate the need to document and justify fully the amounts requested in each category. Such documentation should be provided on additional page(s) immediately following the budget in the proposal and should be identified by line item. The documentation page(s) should be titled "Budget Explanation Page."

Revised budgets must be signed and dated by the authorizing organizational representative, principal investigator, and submitted with the original and two copies.

II. BUDGET LINE ITEMS

Matching Funds. In the space under "Match," specify the source of the matching funds.

Salaries, Wages, and Fringe Benefits. On the Budget Explanation Page, list individually all senior personnel and rates of pay.

Travel. Address the type, extent of travel, and its relation to the project. Itemize by destination, cost, and justify travel outside of the United States and its possessions and Canada. Include dates of foreign meetings or visits. Fare allowances are limited to round-trip, economy rates.

Materials and Supplies. Indicate types required and estimated costs.

Equipment. While items exceeding $500 and two years' useful life are defined as permanent equipment, it is only necessary to list item and dollar amount for each item exceeding $1000. Fully justify.

Contractual Services. Indicate the name, daily compensation (limited to $245/day), estimated days of service, and justify.

Other. Itemize and justify. Include computer equipment, leasing, publication costs, etc.

BUDGET FORM DEFINITIONS & EXPLANATORY REMARKS

The "personnel categories" are defined as follows:

Senior Personnel

"Principal Investigator(s)" are individual(s) so designated by the grantee institution.

A "Faculty Associate" (faculty member) is an individual other than the Principal Investigator who is considered by the performing institution to be a member of its faculty or who holds an appointment as a faculty member at another institution, and who will participate in the project being supported.

Other Personnel

A "Postdoctoral Associate" is an individual who had received a Ph.D., M.D., D. Sc., or equivalent degree less than five years ago, who is not a member of the faculty of the performing institution, and who is not reported under Senior Personnel above.

"Other Professional" is a person who may or may not hold a doctoral degree or its equivalent, who is considered professional and is not reported as a Principal Investigator, faculty associate, post-doctoral associate or student. Examples of persons included in this category are doctoral associates not reported above, professional technicians, mathematicians, physicians, veterinarians, system experts, computer programmers, and design engineers.

A "Graduate Student" (Graduate Assistant) is a part-time or full-time student working on the project in a research capacity who holds at least a bachelor's degree or its equivalent and is enrolled in a degree program leading to an advanced degree.

An "Undergraduate Student" is a student who is enrolled in a degree program (part-time or full-time) leading to a bachelor's degree.

"Support Personnel" include persons working on the project in a non-research capacity, such as secretaries, clerk-typists, drafters, animal caretakers, electricians, and custodial personnel, regardless of whether they hold a degree or are involved in degree work.

APPENDIX IV

INSTRUCTIONS FOR THE FINAL PROJECT REPORT

The final project report is due within sixty days after the expiration of the award. Two (2) copies should be submitted to:

Vice President Research
Arkansas Science & Technology Authority
100 Main Street, Suite 450
Little Rock, AR 72201

Instructions for Part I:

The identification items should be the same as on the award documents.

Instructions for Part II:

The final summary (not less than 200 words nor more than one printed page) must be self-contained and intelligible to a scientifically literate reader. Without restating the project title, it should begin with a topic sentence stating the project's major thesis. The summary should include, if pertinent to the project being described, the following items:

1. The primary objectives and scope of the project.

2. The techniques or approaches used only to the degree necessary for comprehension.

3. The findings and implications stated as concisely and informatively as possible.

4. The potential contribution of the project results to the economic development of Arkansas.

The Authority may disseminate the project summary. Authors should also know that the summary may be used to answer inquiries by nonscientists as to the nature and significance of the research. Scientific jargon and abbreviations should be avoided.